

*I Claim As Our Invention*  
~~Patent claims~~

1. Ring network (RN) having

- a central network element (A) for feeding in data and  
5 for distributing working and protection signals ( $\lambda 1WL$ ,  
 $\lambda 2PR$ ;  $\lambda 2WR$ ,  $\lambda 1PL$ ) on different transmission paths and  
in oppositely directed transmission directions,

- further network elements (B,...,G) for forwarding  
upstream data from the subscriber (TL) and for  
10 distributing working signals ( $\lambda 1WL$ ,  $\lambda 2WR$ ) to the  
subscribers (TL) connected to the network elements,  
characterized

in that the ring network (RN), proceeding from the  
central network element (A) is subdivided into a first  
15 part (R) and a second part (L),

in that in the central network element (A) feeds  
working signals ( $\lambda 2WR$ ,  $\lambda 1WL$ ) into the first and second  
parts of the ring network (RN),

in that the central network element (A), in accordance  
20 with the portions of the working signals ( $\lambda 2WR$ ,  $\lambda 1WL$ )  
fed into the first and second parts (R,L) of the ring  
network (RN), feeds said signals as protection signals  
( $\lambda 2PR$ ,  $\lambda 1PL$ ) respectively into the other part of the  
ring network,

25 in that the further network elements (B, C; G, F)  
forwards the protection signals ( $\lambda 2PR$ ,  $\lambda 1PL$ ) in each  
case as far as the network element (D, E) terminating  
the first and left-hand parts of the ring network and  
the protection signals ( $\lambda 2PR$ ,  $\lambda 1PL$ ) are fed into the  
30 respective other terminating network element (E, D) of  
the first and second parts (R, L) of the ring network  
(RN) and are forwarded counter to the transmission  
direction of the working signals to the central network  
element (A).

35 2. Circuit arrangement according to claim 1,  
characterized

in that the network elements (D, E) terminating the  
first and second parts of the ring network (RN) are

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designed in such a way that the protection signals ( $\lambda$ 2PR,  $\lambda$ 1PL) previously forwarded at the further network elements are selected and fed into the

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respective other terminating network element (E, D) of the first and second parts of the ring network (RN).

3. Circuit arrangement according to claim 1 or 2, characterized

5 in that optical splitters are provided for splitting the working signals ( $\lambda_{2WR}$ ,  $\lambda_{1WL}$ ).

4. Circuit arrangement according to one of claims 1 to 3, characterized

10 in that optical filters or multiplexers are used for joining together different optical signals.

5. Method for distributing data within a ring network (RN) for feeding in data and for distributing working and protection signals ( $\lambda_{1WL}$ ,  $\lambda_{2PR}$ ;  $\lambda_{2WR}$ ,  $\lambda_{1PL}$ )  
15 on different transmission paths and in oppositely directed transmission directions and for forwarding data from the subscriber (TL) and for distributing working signals ( $\lambda_{1WL}$ ,  $\lambda_{2WR}$ ) to the subscribers (TL) connected to the network elements,

20 characterized

in that the ring network (RN) is subdivided into a first part (R) and a second part (L),

in that working signals ( $\lambda_{2WR}$ ,  $\lambda_{1WL}$ ) are fed into both parts of the ring network (RN),

25 in that, in accordance with the portions of the working signals ( $\lambda_{2WR}$ ,  $\lambda_{1WL}$ ) fed into the two parts of the ring network (RN), said signals are respectively fed as protection signals ( $\lambda_{2PR}$ ,  $\lambda_{1PL}$ ) into the other part of the ring network,

30 in that the protection signals ( $\lambda_{2PR}$ ,  $\lambda_{1PL}$ ) forwards in each case as far as the network element (D, E) terminating the first and second parts of the ring network and the protection signals ( $\lambda_{2PR}$ ,  $\lambda_{1PL}$ ) are fed into the respective other terminating network element  
35 (E, D) of the first and second parts of the ring network and are forwarded counter to the transmission direction of the working signals to the central network element (A).

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6. Method according to claim 5, characterized in that the protection signals ( $\lambda_{2PR}$ ,  $\lambda_{1PL}$ ) forwarded at further network elements (B, C; G, F) are selected in the terminating network elements (D, E) and are fed into the respective other terminating network element (E, D) of the first and second parts of the ring.

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